

Missouri Department of Natural Resources

Total Maximum Daily Load Information Sheet

Wilson Creek

Waterbody Segment at a Glance:

County: Christian, Greene
Nearby Cities: Springfield
Length of impairment: 18 miles
Pollutant: Unknown Toxicity
Source: Urban Nonpoint Sources

Propose to change the length of impairment from 14 to 18 miles and the source from Unknown to Urban Nonpoint Sources

TMDL Priority Ranking: Medium



State map showing location of watershed

Description of the Problem

Beneficial uses of Wilson Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life and Human Health associated with Fish Consumption

Use that is impaired

- Protection of Warm Water Aquatic Life

Standards that apply

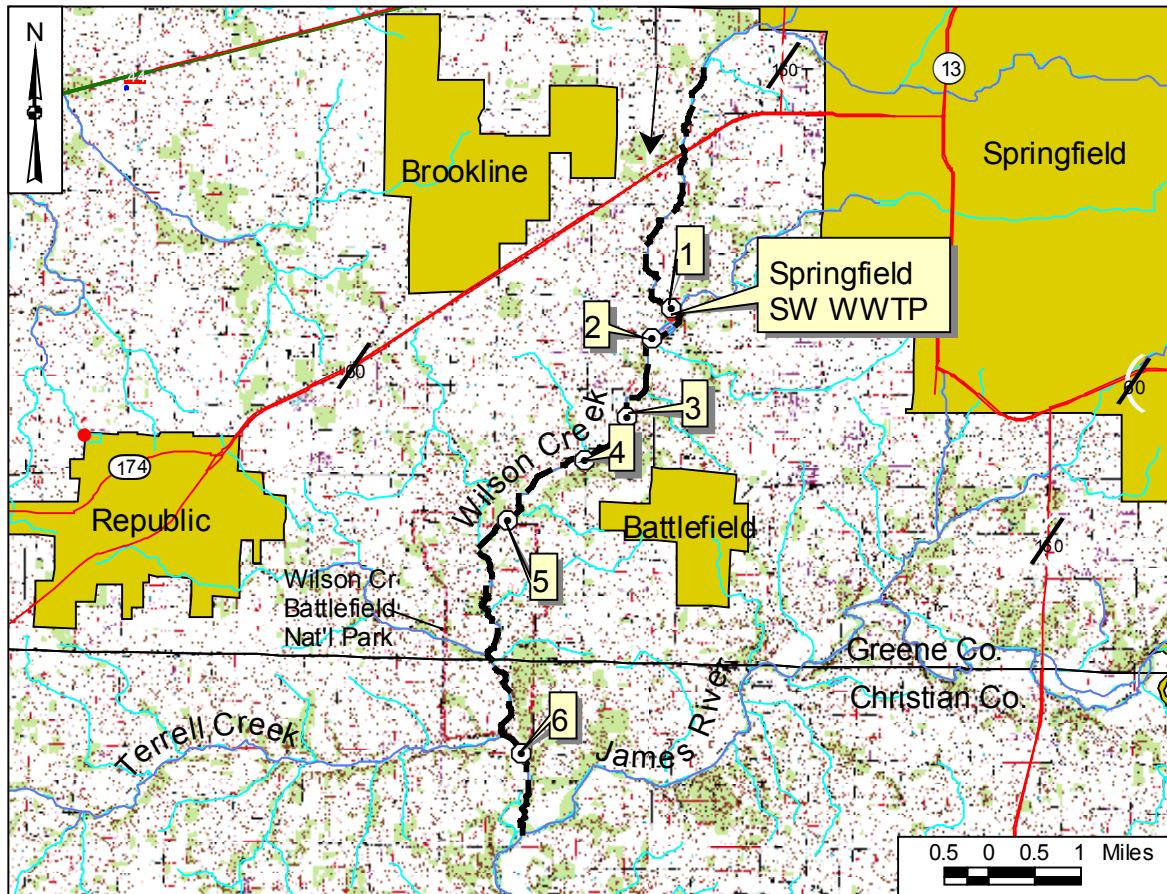
- The impairment of Wilson Creek is based on exceedence of the general criteria contained in Missouri's Water Quality Standards 10 CSR 20-7.030 (3)(A)(C) and (D). These criteria state:
 - Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly or harmful bottom deposits or prevent full maintenance of beneficial uses.
 - Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor or prevent full maintenance of beneficial uses.
 - Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal or aquatic life.

Wilson Creek is one of the largest tributary streams in the James River system, and drains much of the city of Springfield. It flows west and south of the city, passes through the Wilson Creek National Civil War Battlefield, and joins the James River about eight miles south of the city. Wilson Creek is on the 1998 303(d) list for unknown toxicity from urban nonpoint sources. Evidence of toxicity includes very low diversity of fish and aquatic invertebrate animals, based upon sampling by the Missouri Department of Conservation and biologists at City Utilities of Springfield. Direct toxicity testing of

waters in the Wilson Creek watershed in 1989 by the National Park Service found toxicity in both Wilson Creek and South Creek.

The U.S. Geological Survey completed a study of water quality of Wilson and Pearson Creeks during normal and stormwater flow conditions in 2000. This study analyzed waters for such toxicants as heavy metals, pesticides and other organic chemicals. The data is still being reviewed by the USGS.

Wilson Creek near Springfield in Greene County, Missouri, with Sampling Sites



--- Impaired Segment → Direction of Flow

Site Index

- 1 – Near Brookline
- 2 – 0.5 mile below Springfield SW WWTP
- 3 – 1.6 miles below Springfield SW WWTP
- 4 – 2.3 miles below Springfield SW WWTP
- 5 – 3.5 miles below Springfield SW WWTP
- 6 – At Wilson Road

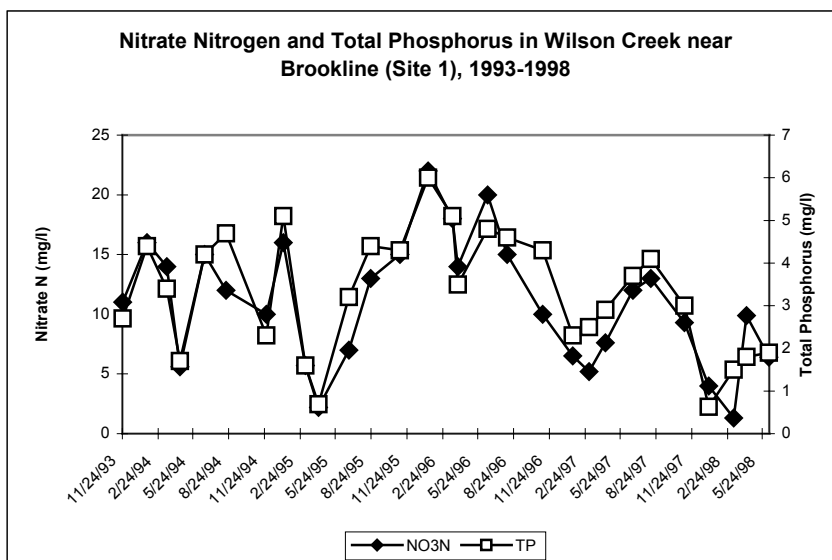
Table 1. Average Aquatic Invertebrate Diversity in Streams of the James River Basin, 1984-92. (after Youngsteadt, City Utilities of Springfield. 1994.).

Stream	No. of EPT¹ Taxa	Biotic Index	#Taxa/100 Organisms
Upper James River	30	23	18
Upper Sawyer Cr.	28	25	19
Lower Sawyer Cr.	33	23	20
Turner Cr.	28	23	20
Upper Pearson Cr.	29	26	17
Lower Pearson Cr.	14	28	14
Lower James River	22	26	17
Wilson-Fassnight Jordan creeks	3	36	8

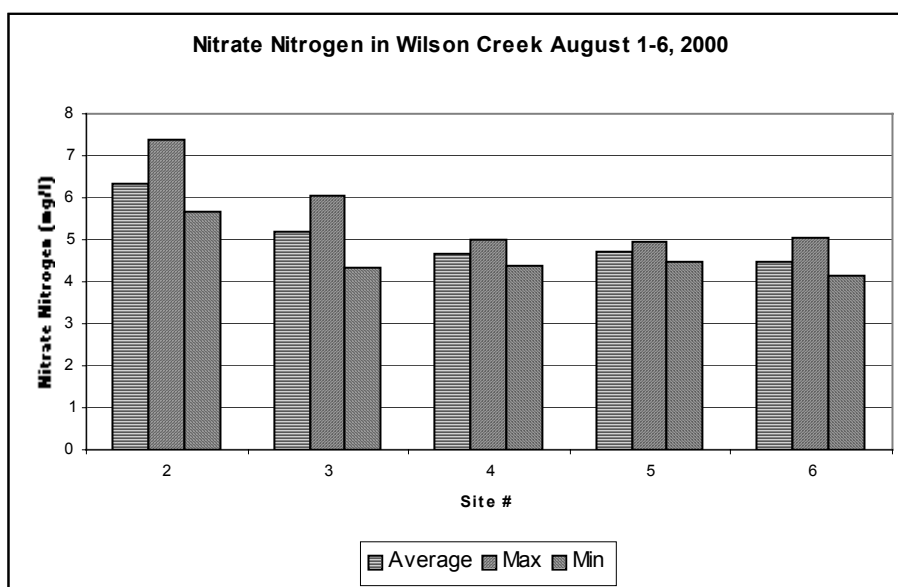
Table 2. Number of Fish Species Found in Sampling by the Missouri Department of Conservation in 1995. (after Kiner,1995).

Stream	No. of Fish Species Found
Upper James River	15-19
Wilson Creek	0
Finley Creek	8-21
Crane Creek	5-7
Flat Creek	13-23
Lower James River	13

¹ EPT=Ephemeroptera, Plecoptera and Trichoptera. (Mayflies, Stoneflies and Caddisflies) three groups of pollution sensitive insects living in streams.



Source: U.S. Geological Survey



Source: Missouri Department of Natural Resources

For more information call or write:

Missouri Department of Natural Resources

Water Pollution Control Program

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